

**U.S. Department of Energy
Technical Qualification Program**

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Emergency Management Topical Area

Study Guide

**Developed by the
*Oak Ridge Operations Office***

May 1996



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Section 1.0 General Technical

Competency 1.1	1-1
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Emergency management personnel shall demonstrate a familiarity level knowledge of the relationship of other disciplines to the emergency management function and the ability to work with personnel in these other disciplines.

Competency 1.2	1-8
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Emergency management personnel shall demonstrate a working level knowledge of hazardous material safety to oversee emergency activities and to provide guidance in mitigating emergencies.

Competency 1.4	1-11
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Emergency management personnel shall demonstrate a working level knowledge of protective measures.

Competency 1.5	1-16
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Emergency management personnel shall demonstrate a working level knowledge of external agency response to an emergency.

Competency 1.6	1-21
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Emergency management personnel shall demonstrate a working level knowledge of the concepts associated with environmental protection, transport and diffusion.

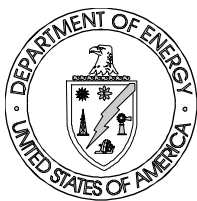


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Competency 1.7	1-25
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Emergency management personnel shall demonstrate a working level knowledge of command and control during an emergency.

Competency 1.9	1-29
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Emergency management personnel shall have a familiarity level knowledge of emergency rescue and treatment.

Competency 1.10	1-33
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Emergency management personnel shall demonstrate a working knowledge of the integration/interface of the following types of emergency plans:

- Site emergency plans
- Facility emergency plans
- Building emergency plans
- Security emergency plans
- Spill prevention, containment and countermeasure plans
- Fire prevention/suppression plans
- Other worker safety plans
- Local, state, and tribal emergency plans
- Other environmental emergency contingency plans

Competency 1.11	1-38
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Emergency management personnel shall demonstrate a working level knowledge of the relationships of emergency planning, preparedness, response, and post-incident activities.



Section 2.0 Regulatory

Competency 2.1 2-1

Emergency management personnel shall demonstrate an expert level knowledge of the following emergency management related Department of Energy (DOE) Orders:

- **DOE Order 5500.1, Emergency Management System**
- **DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements**
- **DOE Order 5500.3, Planning and Preparedness for Operational Emergencies**
- **DOE Order 5500.7, Emergency Operating Records Protection Program**
- **DOE Order 5500.10, Emergency Readiness Assurance Program**

Competency 2.2 2-17

Emergency management personnel shall demonstrate a working level knowledge of Department of Energy (DOE) Order 5500.4, Public Affairs Policy and Planning Requirements for Emergencies.

Competency 2.3 2-21

Emergency management personnel shall demonstrate a working-level knowledge of the capabilities of the Department of Energy National Response Assets.

Competency 2.4 2-28

Emergency management personnel shall demonstrate an expert level knowledge of the notification and event classification requirements in Department of Energy (DOE) Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements.

Competency 2.5 2-34

Emergency management personnel shall demonstrate a working level knowledge of the notification and reporting requirements in Department of Energy (DOE) Order 5000.3, Occurrence Reporting and Processing of Operations Information.



Competency 2.6 2-44

Emergency management personnel shall demonstrate a working level knowledge of the following guidance documents sufficient to apply the guidance to emergency management activities.

- **Emergency Management Guides (EMGs)**
- **Emergency Response Planning Guidelines (ERPGs)**
- **Protective Action Guide (PAG)**

Competency 2.7 2-57

Emergency management personnel shall demonstrate a working level knowledge of the following Federal regulations related to emergency management.

- **10 CFR 835, Occupational Radiation Protection**
- **18 CFR 12, Safety of Water Power Projects and Project Works**
- **29 CFR 1910.38, Employee Emergency Plans and Fire Prevention Plans**
- **29 CFR 1910.94, 96, 134, & 165 Occupational Safety and Health Act (OSHA)**
- **29 CFR 1910.120, Hazardous Waste Operations and Emergency Response**
- **29 CFR 1910.1200, Hazard Communications**
- **40 CFR 262, 264, & 280, Resource Conservation and Recovery Act (RCRA)**
- **40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities**
- **49 CFR 172, Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, and Training Requirements**
- **Superfund Amendments and Reauthorization Act (SARA) Title III**
- **40 CFR 350, Trade Secrecy Provisions and Information Disclosure Requirements**
- **40 CFR 355, Facility Notification and Release Reporting Requirements**
- **40 CFR 370, Hazardous Chemical Inventory Reporting Requirements**
- **40 CFR 372, Toxic Release Reporting Requirements**
- **40 CFR 300 & 302, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**
- **Hazardous Materials Transportation Uniform Safety Act of 1990 (HMTUSA)**
- **Clean Air Act Amendments**
- **Oil Pollution Act**
- **40 CFR 112 & 117, Clean Water Act (CWA)**



Section 3.0 Administrative

Competency 3.1 3-1

Emergency management personnel shall demonstrate a working level knowledge of Departmental emergency management roles and responsibilities.

Section 4.0 Management, Assessment, and Oversight

Competency 4.1 4-1

Emergency management personnel shall demonstrate a working level knowledge of the development, review, and/or approval of emergency management planning documents.

Competency 4.2 4-8

Emergency management personnel shall demonstrate a working level knowledge of the development, review, and approval process for emergency management documentation.

Competency 4.3 4-12

Emergency management personnel shall demonstrate a working level knowledge of the process for planning, conducting, and evaluating emergency response exercises.

Section 5.0 Topical Competencies

Chemical Processing Competency 2.3 CP 1-1

Chemical Processing personnel shall demonstrate a familiarity level knowledge of Department of Energy, DOE Order 5000.3B, Occurrence Reporting and Processing of Operations Information.

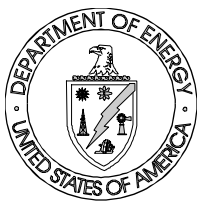


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Chemical Processing Competency 2.11	CP 1-8
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Chemical processing personnel shall demonstrate a familiarity level knowledge of the following emergency management related Department of Energy (DOE) Orders:

- DOE Order 55001., Emergency Management System
- DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements
- DOE Order 5500.3, Planning and Preparedness for Operational Emergencies
- DOE Order 5500.7, Emergency Operating Records Protection Program
- DOE Order 5500.10, Emergency Readiness Assurance Program

EH Resident Competency 1.28	EH 1-1
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EH Residents shall demonstrate a familiarity level knowledge of the safety hazards associated with means of egress.

EH Resident Competency 2.2	EH 1-6
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EH Residents shall demonstrate a working level knowledge of Department of Energy (DOE) Order 5000.3B, Occurrence Reporting and Processing of Operations Information.

EH Resident Competency 2.20	EH 1-15
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EH Residents shall demonstrate a working level knowledge of the requirements for the emergency management system in the following Department of Energy (DOE) Orders:

- DOE Order 5500.1B, Emergency Management System
- DOE Order 5500.2B, Emergency Notification, Reporting Requirements
- DOE Order 5500.3A, Reactor and Non-Reactor Nuclear Facilities Emergency Management Planning, Preparedness and Response Program for DOE Operations

Electrical Systems Competency 2.2	ES 1-1
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Electrical systems personnel shall demonstrate a familiarity level knowledge of Department of Energy, DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information.



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Electrical Systems Competency 4.2	ES 1-7
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Electrical systems personnel shall demonstrate the ability to evaluate contractor activities and reports controlled by Department of Energy, DOE Order 5000.3B, Occurrence Reporting and Processing of Operations Information.

Facility Maintenance Management Competency 2.5	FM 1-1
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Facility maintenance management personnel shall demonstrate a familiarity level knowledge of the Department of Energy, DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information.

Facility Representative Competency 4.3	FR 1-1
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A Facility Representative shall demonstrate a working level knowledge of the Department of Energy emergency management system and response practices.

Facility Representative Competency 4.6	FR 1-8
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A Facility Representative shall demonstrate a working level knowledge of the Occurrence Reporting and Processing System necessary to ensure that occurrences are properly reported and processed in accordance with DOE Order 5000.3B "Occurrence Reporting and Processing of Operations Information."

Fire Protection Competency 4.7	FP 1-1
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Fire protection personnel shall demonstrate the ability to assess emergency response operations including personnel training and qualification, equipment, and facilities.

Industrial Hygiene Competency 4.6	IH 1-1
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Industrial hygiene personnel shall demonstrate a working level knowledge of emergency preparedness and response operations including personnel training, qualifications, equipment, organizational interfaces, procedures and documentation.

Mechanical Systems Competency 2.3	MS 1-1
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Mechanical systems personnel shall demonstrate a familiarity level knowledge of Department of Energy (DOE) Order 5000.3B, Occurrence Reporting and Processing of Operations Information.



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Mechanical Systems Competency 4.10	MS 1-7
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Mechanical systems personnel shall demonstrate the ability to evaluate contractor activities and reports controlled by DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information.

Nuclear Safety Competency 2.1	NS 1-1
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Nuclear safety system personnel shall demonstrate a working level knowledge of Department of Energy (DOE) Order 5000.3B, Occurrence Reporting and Processing of Operations Information, with respect to its impact on Department nuclear safety.

Radiation Protection Competency 2.5	RP 1-1
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Radiation protection personnel shall demonstrate a familiarity level knowledge of the following Federal regulations, codes, standards, and DOE Orders related to emergency planning and preparedness as they pertain to radiological incidents:

- 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response
- DOE Order 5500.1B, Emergency Management Systems
- DOE Order 5500.2B, Emergency Categories, Classes, and Notification and Reporting Requirements
- DOE Order 5500.3A, Planning and Preparedness for Operational Emergencies
- DOE Order 5500.4A, Public Affairs Policy and Planning Requirements for Emergencies
- DOE Order 5500.5A, Public Affairs Policy & Planning Requirements for a Fuel Supply Disruption Emergency
- DOE Order 5500.6B, Shutdown of Departmental Operations Upon Failure by Congress to Enact Appropriations
- DOE Order 5500.7B, Emergency Operating Records Protection Program
- DOE Order 5500.8A, Energy Emergency Planning and Management
- DOE Order 5500.9A, Emergency Planning, Preparedness, and Response to Continuity of Government Emergencies
- DOE Order 5500.10, Emergency Readiness Assurance Program
- DOE Order 5530.3, Radiological Assistance Program
- DOE Order 5530.5, Federal Radiological Monitoring and Assessment Center

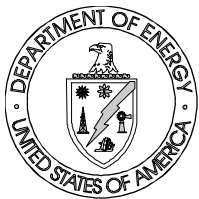


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Technical Manager Competency 1.7 TM 1-1

A technical manager shall demonstrate a working level knowledge of the Department's emergency management system and response practices to ensure program priorities are established, formal process requirements are met, and resources applied to ensure safety of operations.

Waste Management Competency 2.2 WM 1-1

Waste management personnel shall demonstrate a working level knowledge of Department of Energy (DOE) Order 5000.3, Occurrence Reporting and Processing of Operations Information.

Waste Management Competency 2.8 WM 1-11

Waste management personnel shall demonstrate a familiarity level knowledge of 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.

Appendix A Glossary A-1

Appendix B Training-to-Competency Matrix B-1



**U.S. Department of Energy
Technical Qualification Program**

Emergency Management Topical Area

Study Guide

Introduction

May 1996



1. Scope

This study guide encompasses the following competencies related to emergency management:

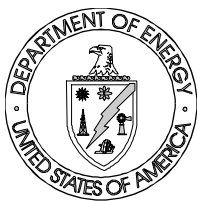
- Emergency Management 1.1, 1.2, 1.4-1.7, 1.9 - 1.11, 2.1 - 2.7, 3.1, and 4.1 - 4.3
- Chemical Processing 2.3 and 2.11
- EH Resident 1.28, 2.2, and 2.20
- Electrical Systems 2.2 and 4.2
- Facility Maintenance Management 2.5
- Facility Representative 4.3 and 4.6
- Fire Protection 4.7
- Industrial Hygiene 4.6
- Mechanical Systems 2.3 and 4.10
- Nuclear Safety 2.1
- Radiation Protection 2.5
- Technical Manager 1.7
- Waste Management 2.2 and 2.8

These emergency management competencies can be attained and demonstrated by three methods: competency equivalency documented by previous training, education, and experience; competency evaluation of knowledge and skills using examinations, performance demonstrations, or evaluations; and competency exemption, which is a written release from the requirement to meet a specific competency. Some general examples of these methods include documentation of equivalent training or education, a test-out or challenge test, a requirement waiver, completion of applicable coursework, and other learning activities such as this study guide.

2. Purpose

The purpose of this study guide is twofold:

- To identify the training content and associated self-study activities that will promote the learning of the skills and knowledge associated with the emergency management competencies
- To provide a matrix to existing comparable and applicable learning activities (such as training or education courses) and materials, which can then be used to satisfy the competency requirements.



3. References

- a. 10 *Code of Federal Regulations* (CFR) 835, "Occupational Radiation Protection."
- b. 18 CFR 12, "Safety of Water Power Projects and Project Works."
- c. 40 CFR 112 & 117, "Clean Water Act (CWA)."
- d. 40 CFR 262, 264, & 280, "Resource Conservation and Recovery Act (RCRA)."
- e. 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities."
- f. 40 CFR 300 & 302, "Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)."
- g. 40 CFR 350, "Trade Secrecy Provisions and Information Disclosure Requirements."
- h. 40 CFR 370, "Hazardous Chemical Inventory Reporting Requirements."
- i. 40 CFR 372, "Toxic Release Reporting Requirements."
- j. 49 CFR 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, and Training Requirements."
- k. American Red Cross, *Advanced First Aid and Emergency Care*, 1979.
- l. Clean Air Amendments.
- m. DOE *Emergency Operations Drill or Exercise Evaluator Manual*, U.S. Department of Energy.
- n. DOE *Guidance for Emergency Response Drills and Exercises*, U.S. Department of Energy.
- o. DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, February 1993.
- p. DOE Order 5500.1B, *Emergency Management*, April 1991.



- q. DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*, February 1992.
- r. DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*, February 1992.
- s. DOE Order 5500.4A, *Public Affairs Policy and Planning Requirements for Emergencies*, and the attachments.
- t. DOE Order 5500.6B, *Shutdown of Departmental Operations Upon Failure by Congress to Enact Appropriations*.
- u. DOE Order 5500.7B, *Emergency Operating Records Protection Program*.
- v. DOE Order 5500.8A, *Energy Emergency Planning and Management*.
- w. DOE Order 5500.9A, *Emergency Planning, Preparedness, and Response to Continuity of Government Emergencies*.
- x. DOE Order 5500.10, *Emergency Readiness Assurance Program*.
- y. DOE Order 5530.1A, *Accident Response Group*.
- z. DOE Order 5530.2, *Nuclear Emergency Search Team*.
- aa. DOE Order 5530.3, *Radiological Assistance Programs*.
- ab. DOE Order 5530.4, *Aerial Measuring System*.
- ac. DOE Order 5530.5, *Federal Radiological Monitoring and Assessment Center*.
- ad. DOE *Radiological Control Manual*, U.S. Department of Energy, April 1994.
- ae. DOE-STD-1056-93, *Guide to Good Practices for Line and Training Manager Activities Related to Training*.
- af. DOE-STD-1070-94, *Guidelines for Evaluation of Nuclear Facility Training Programs*.
- ag. DOE-STD-1078-94, *Training Program Handbook: A Systematic Approach to Training*.



- ah. *Emergency Management Guide*, U.S. Department of Energy, Office of Planning and Operations, December 1991.
- ai. Hazardous Materials Transportation Uniform Safety Act of 1990 (HMTUSA).
- aj. National Fire Protection Association (NFPA) 13E, *Fire Department Operations in Properties Protected by Sprinkler, Standpipe Systems*.
- ak. NFPA 471, *Recommended Practice for Responding to Hazardous Materials Incidents*.
- al. NFPA 1202, *Organization of a Fire Department*.
- am. NIOSH/OSHA/USCG/EPA, *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*.
- an. Oil Pollution Act.
- ao. Superfund Amendments and Reauthorization Act (SARA) Title III.
- ap. U.S. Department of Energy, Office of Emergency Planning and Operations, *Emergency Management Guide*, February 1995.

4. How to Use This Study Guide

- a. Read this guide and complete the associated learning activities for those competencies you wish to satisfy through self-study. As you need to, refer to the glossary located in Appendix A, which contains the standard definitions.
- b. For assistance or additional information, contact your supervisor or subject matter experts at your facility or site, or refer to identified resources in the Training-to-Competency Matrix, located in Appendix B.



5. DOE Orders in Transition

DOE Orders are in a state of transition. However, Order cancellation does not necessarily mean that the Order is no longer in effect. For example, DOE O 440.1, Worker Safety and Health Program, which cancels seven occupational safety-related Orders, states:

“Cancellation of an Order does not, by itself, modify or otherwise affect any contractual obligation to comply with such an Order. Canceled Orders that are incorporated by reference in a contract shall remain in effect until the contract is modified to delete the reference to the requirements in the canceled Orders.”

This study guide refers to both the old and new Orders. There are three reasons for this: (1) as stated above, many facilities are contractually obligated to follow the old Orders, (2) the replacement process is dynamic and will continue for some time, and (3) the old Orders are often content-oriented and house the in-depth details regarding processes and procedures.

Rather than publish a matrix of new and old Orders within this study guide, participants should refer to the document “Crosswalk of Old Directives Numbers to New Directives Numbering System.” This is an excellent resource. It is linked to the DOE homepage “Clearinghouse for Training, Education and Development” or may be reached directly at the following gopher site:

`gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc`